Extensive rail infrastructure in the Gulf Coast region combined with 32,000+ total route miles of track across the western two-thirds of the U.S. enables Union Pacific to offer the broadest service network in North America. Union Pacific has built a strong Gulf Coast infrastructure to support our chemical customers by creating capacity for growth.

This investment in track and infrastructure, as well as commercial facilities, which includes construction and expansion of our Storage in Transit Network (SIT), was at an all-time record high in 2016.

Building the infrastructure to support innovative transportation plans requires substantial investment. Since 2009, Union Pacific has invested more than $4.0 billion in Texas, including $1 billion to better serve the Gulf region. In 2016, Union Pacific replaced 42 miles of track just outside Houston and replaced more than 180,000 ties between San Antonio and Rockdale.

Union Pacific also made substantial investments in and around Mesquite, which increased velocity on the Dallas Subdivision more than 15 percent.

We are also improving our capacity by upgrading our lines to 286 gross ton weight. On the Angleton branch alone, we have spent more than $100 million on infrastructure renewal and expansion, including 286k bridge upgrades. The project is scheduled for completion during the second quarter 2017.

Encompassing more than 300 miles of track, our maintenance efforts will improve cycle times, reduce slow orders, reduce asset needs and create opportunity for growth. While there are numerous projects that are both completed and underway, the following projects have had a significant impact on capacity and fluidity for the railroad.

To improve capacity we added eight miles of double main track between Dallas and Mesquite, and in Houston we’ve added about 15 miles between Sugarland and West Junction. We also double-tracked around our major metro terminal areas to improve network fluidity and increase reliability.

In Louisiana, we added about 10 miles of double track between Livonia and Addis, supporting growth on the route to New Orleans.

We have strengthened our capacity to our Mexico gateways, especially at Eagle Pass and Laredo, through the combined addition of signal upgrades, siding enhancement and terminal facility expansions - all to support increasing traffic demands from Mexico.

Numerous siding extensions have been added between El Paso and Shreveport, enabling additional train length in a growing premium corridor.

We have also made improvements at Mont Belvieu, Texas where we expanded UP’s rail terminal in support of growing customer demand.

We have improved our fluidity between Pine Bluff, Arkansas and Livonia, through upgrading the signal system, creating more robust run-through capacity at both terminals.

In Louisiana, we added about 10 miles of double track between Livonia and Addis, supporting growth on the route to New Orleans.

Over the last few years, we have continued to invest in projects that are designed to improve fluidity and allow for growth like the re-design and configuration of Tower 55. This was one of the railroad’s most successful Public-Private Partnerships in recent times, completed in 2014. This project ultimately improved fluidity for customers in the region for Union Pacific, BNSF, FWWR and Amtrak - all beneficiaries of the combined efforts of public private partnership.

Projects in the Lone Star State

$6.3B INFRASTRUCTURE INVESTMENTS in the SOUTHERN REGION 2009-2016

$4.0B INFRASTRUCTURE INVESTMENTS in TEXAS 2009-2016

APRIL 2017

UNION PACIFIC in the SOUTHERN REGION

2017 PLAN $745 million CAPACITY and INFRASTRUCTURE IMPROVEMENTS in the SOUTHERN REGION

building america
We continue to invest heavily in our SIT network as the needs of the plastics industry continues to warrant expansion. Since 2013 and continuing through 2019 we have plans to increase overall SIT capacity by 30 percent. We spent approximately $41 million over the past few years in the Southern Region area to expand our SIT capacity. Our future investment will exceed that amount and support additional SIT yards throughout the Gulf area, as well as in strategic destinations across the U.S. to grow additional capacity for our customers.

#### Dallas to Dock

Plastics Export Solution

Union Pacific continuously looks for ways to support customers and emerging markets. Along the Gulf Coast, that means developing solutions to meet shipper’s needs in the rapidly growing plastic resin market. Union Pacific recently partnered with Katoen Natie, packaging industry leaders, to offer our Dallas to Dock service that provides plastic producers with a low cost export solution for plastic pellets, expanding their reach overseas. The Dallas to Dock service transports plastic pellets in hopper cars from the Gulf region to Dallas. At Dallas, the pellets are packaged and transferred into international intermodal containers where they continue their journey to ocean ports on our premium intermodal service.

To support the Dallas to Dock service, a state-of-the-art plastic packaging facility is being constructed in Dallas in the Prime Pointe Industrial Park. Prime Pointe is a 3,000-acre rail served industrial park located in South Dallas County served by Union Pacific. Adjacent to Union Pacific’s Dallas Intermodal Terminal (DIT), the facility will have approximately 500,000 square feet of warehouse space with railroad access. KTN’s new facility, scheduled for completion in early 2018, will be capable of expanding up to five times the initial size as market conditions warrant expansion. The new plastic packaging facility is strategically located in Dallas to align with empty container availability and Union Pacific’s premier intermodal service to the West Coast for export.

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#### Safest Railroad in North America Back to Back

Union Pacific achieved its best annual employee-safety rate in 2016, marking the safest year in its 154-year history. The employee reportable injury rate is measured by injuries for every 200,000 employee hours worked. The company’s employee reportable injury rate declined 14 percent from 0.87 in 2015 to 0.75 in 2016.

We also made safety gains with an approximately three percent improvement in the 2016 derailment rate compared with 2015. The reportable rail equipment incident rate per million train miles dropped from 3.10 in 2015 to 3.02 in 2016.

Union Pacific employs a variety of safety and risk mitigation activities, including the Courage to Care personal commitment which empowers employees to look out for their peers and “stop the line” on any operation that could result in an incident.

Looking Ahead

Union Pacific continues to have a strong relationship and presence within the chemical industry as one of the largest transporters of chemical products in the nation. We are committed to the chemical industry and to grow with our customers’ needs while providing world-class transportation of chemical products safely across the railroad.

Our dedicated team of marketing and sales professionals are here to meet your transportation requirements. Please continue to communicate to us where you intend to grow so we can meet your needs with continued expansion of our network. Thank you for your business.

Kari Kirchhoefer  
Vice President & General Manager – Chemicals  
Union Pacific Railroad
TEXAS

Home to a Transportation Leader

For more than a century, BNSF Railway Company has played an important role in the Texas economy. Headquartered in Fort Worth, BNSF employs a workforce of more than 8,900 people in Texas, with an annual payroll exceeding $1 billion.

Nearly 15 percent of BNSF’s vast 32,500-mile rail network, including sections of the Transcon and Midcon Corridors, is in Texas, supporting significant operations in 20 communities and ensuring that goods and commerce flow in and out of the Lone Star State.

Through our strategically placed intermodal facilities in Alliance (Fort Worth) and Houston, and our facilities in El Paso and Eagle Pass at the Mexican border, BNSF delivers a wide variety of consumer products to Texas retailers and businesses. Among the items are packaged goods, paper products, clothes, appliances, electronics and automobiles. In fact, BNSF is the national leader in intermodal transportation (truck trailers and containers).

We also deliver cleaner-burning Powder River Basin coal from Wyoming and Montana to provide the energy that helps power the Texas economy, lumber and other building materials from the Northwest and the Southeast to satisfy construction demands throughout the state, and fertilizer from plants around the country to feed crops on the Texas plains.

In addition, we deliver Texas products to the world. Our facilities on the Gulf of Mexico, including the Ports of Houston, Beaumont, Galveston, Brownsville and Corpus Christi, provide a vital link to the state’s petroleum and chemical industries, allowing them to thrive in a global economy. We also help Texas farmers move agricultural products to every corner of the world, and with our innovative transload facilities, we are linking the state’s ethanol industry to market.

Annually, BNSF moves more than 5.4 million carloads of freight in Texas, helping to reduce truck traffic and congestion on our highways and reducing emissions. We also use new cleaner-burning, more fuel-efficient locomotives that are able to move, on average, a ton of freight 500 miles on one gallon of fuel.

Since 2014, BNSF has been instrumental in locating 56 new or expanded facilities in Texas, creating approximately 1,140 jobs and more than $994 million in investments. Projects include Gestamp in Amarillo, Jefferson Refinery in Beaumont, and Kinder Morgan in Houston.

Our contribution to Texas doesn’t end at the tracks. In addition, the BNSF Foundation contributed more than $3.2 million to various local charities in 2016.

BNSF Railway Service in Texas - 2016

Employees
8,901

Payroll
$1,003,475,551

BNSF Foundation Giving
$3,213,514

Lines Operated
Route miles owned: 2,627
Route miles trackage rights: 2,342

Carloadings
Originated: 737,596
Handled within state: 5,415,879
Terminated: 1,373,059

Major Facilities

Corporate Headquarters
Fort Worth

Rail Yards

Intermodal Facilities
Alliance (Fort Worth), El Paso, Pearland (Houston)

BNSF Facts

Operating in 28 States and 3 Canadian Provinces
BNSF Freight Cars: 72,000
Locomotives: 8,000
Route Miles: 32,500
Number of Employees: 41,000
Military: 7,200 veterans employed
Capital Commitments

In 2017, BNSF plans to invest approximately $255 million in its network in Texas, and approximately $3.4 billion in capital expansion and maintenance across its system. The largest component of the plan will be to replace and maintain BNSF’s core network and related assets to ensure BNSF continues to operate a safe and reliable network. In addition, the plan includes investing in expansion projects, continuing implementation of positive train control (PTC), and acquiring new locomotives, freight cars, and other equipment. In 2016, BNSF invested approximately $400 million in Texas for capital projects.

Coal

About 10 percent of the electricity produced in the United States is generated from coal hauled by BNSF. More than 90 percent of the coal BNSF hauls comes from the Powder River Basin (PRB) in Wyoming and Montana and is 60 percent lower in sulfur than most other U.S. coal sources.

Agricultural

BNSF is one of the largest grain-hauling railroads in the United States. In fact, BNSF hauls enough grain to supply 900 million people with a year’s supply of bread. Approximately 50 percent of the agricultural commodities traffic BNSF hauls is transported to export points in the Pacific Northwest, Gulf of Mexico, Mexico and the Great Lakes.

Consumer

Many items found in local retail stores, restaurants and automobile dealerships were shipped on a BNSF train. Each year BNSF moves about 10 percent of the vehicles sold in the United States. BNSF is among the world’s top transporters of intermodal traffic, and the only western U.S. railroad offering direct intermodal service to the Southeast, as well as the fastest intermodal service to the Northeast.

Industrial

BNSF is a leader in transporting forest products, chemicals, metals and other products that drive our economy. Each year BNSF transports enough lumber to build more than 500,000 homes; enough asphalt to lay a single lane road four times around the equator; and enough coiled sheet steel to lay the unrolled coils end to end 12 times between New York City and Seattle, WA.

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Amy Hawkins  
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Economic Development:  
James O’Donley  
South Texas  
817-867-6137

Janet Black  
North Texas  
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BNSF Emergency Hotline:  
1-800-832-5452

For more information, please visit our website at www.bnsf.com
Designating the Texas Highway Freight Network

May 11, 2017
Texas Freight Advisory Committee
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<td>CRFC</td>
<td>Critical Rural Freight Corridor</td>
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<tr>
<td>CUFC</td>
<td>Critical Urban Freight Corridor</td>
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<tr>
<td>FAST Act</td>
<td>Fixing America's Surface Transportation Act</td>
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<td>Metropolitan Planning Organization</td>
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<td>National Freight Program</td>
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<td>Texas Freight Advisory Committee</td>
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<td>USDOT</td>
<td>US Department of Transportation</td>
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The Texas Highway Freight Network

The Texas Highway Freight Network (THFN) is the portion of the State's highway network most critical to the movement of freight. The designation of the THFN was a key policy outcome of the adopted Texas Freight Mobility Plan (TFMP), and it is the part of the highway network in Texas that is evaluated for freight needs and recommendations. The THFN is comprised of the following:

- Texas' portion of the U.S. Department of Transportation (USDOT) designated National Highway Freight Network;
- Texas Highway Trunk System (Trunk System) (codified in the Texas Administrative Code Title 43, Part 1, Chapter 16, Subchapter B); and
- Other corridors significant to moving freight in Texas, systematically identified in the THFN designation process.

The definition and designation of these components are summarized below.

The National Highway Freight Network

**National Highway Freight Network (NHFN)** – The NHFN, defined by USDOT, is currently comprised of the following components:

- **Primary Highway Freight System (PHFS)** – The PHFS was designated by the Federal Highway Administration (FHWA) based on 8 factors:
  1. Origins and destinations of freight movement in the United States;
  2. Total freight tonnage and value of freight moved by highways;
  3. Percentage of annual average daily truck traffic in the annual average daily traffic on principal arterials;
  4. Annual average daily truck traffic on principal arterials;
  5. Access to land and maritime ports of entry;
  6. Access to energy exploration, development, installation, or production areas;
  7. Access to population centers; and
  8. Network connectivity.

    Texas' portion of the PHFS totals 3,727.77 miles.

- **Non-PHFS Interstates** - The Fixing America’s Surface Transportation (FAST) Act included the entirety of the Interstate System—including Interstate facilities not located on the PHFS—in the NHFN. The FHWA will update the maps and tables on a periodic basis, incorporating any Interstate System routes missing currently, as well as roads added to the Interstate System.
The FAST Act restricts National Freight Program (NFP) funding on Non-PHFS Interstates in states deemed high mileage states, defined as containing more than two percent of the National PHFS. Texas is classified as a high mileage state and thus, cannot use NFP funding on Non-PHFS Interstate.

In addition, as part of the FAST Act, USDOT allocated additional miles to each state, based on its PHFS mileage, to designate to the NHFN. These miles are eligible for NHP funds and are referred to as:

- **Critical Urban Freight Corridors (CUFC)** – Key freight highway facilities in urbanized areas (defined by the U.S. Census Bureau); and
- **Critical Rural Freight Corridors (CRFC)** – Key freight highways located outside of urbanized areas.

Texas may designate as CUFCs a maximum of 10 percent of the PHFS mileage in the State (372.78 miles); and may designate as CRFCs a maximum of 20 percent of the PHFS mileage in the State (745.55 miles).

**The Texas Highway Trunk System**

The Texas Highway Trunk System is a network of rural divided highways that complements and includes elements of the Interstate Highway System. The Trunk System is limited to a maximum of 11,500 miles, and it is chosen by the Texas Transportation Commission as recommended by the Texas Department of Transportation (TxDOT) Executive Director. Routes in the Trunk System should meet one of the following criteria:

1. Maximizing the use of existing four-lane divided roadways;
2. Minimizing circuitous or indirect routing;
3. Connecting with principal roadways from adjacent states;
4. Connecting with principal deep water ports with channel depths of 40 feet or more;
5. Connecting with principal Mexican ports of entry;
6. Serving significant military or other national security installations;
7. Serving tourism or recreational areas;
8. Comprising major truck routes;
9. Which are within 25 miles or less of cities of 10,000 population or greater;
10. Closing gaps in the existing state highway system; and
11. Providing system connectivity.
Defining and Designating the Texas Highway Freight Network

The THFN is designated through a systematic, data-driven and stakeholder-informed process, which is summarized to the right.

**Step 1** – The evaluation of corridors was conducted using a customized designation tool that used multicriteria analysis to score every segment on every corridor. Input from stakeholders across the state as well as the Texas Freight Advisory Committee (TxFAC) informed the development and weighting of the criteria.

**Step 2** – Once the segments were scored, the results for the corridors in the top three and top four scores

---

**Draft Scored THFN: Alternative 1**

- NHFN + Trunk System + all rural corridors scoring above the mean
- NHFN + Trunk System + all rural corridors scoring below the mean

---

**NHFN + Trunk System + all rural corridors scoring at the mean and above – existing THFN scoring below the mean**
### Exhibit 1: Draft Scored Texas Highway Freight Network Scenario 1

<table>
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<td>634</td>
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### Texas Highway Freight Network Map

- **Legend**:
  - Texas Freight Highway Network
  - FSD Score Weighted - Top 4
  - Mean to 0.5 Std Dev
  - 0.5 to 1.5 Std Dev
  - 1.5 to 2.5 Std Dev
  - > 2.5 Std Dev
  - Primary and Secondary FN
  - Commercial Border Crossing
  - Seaports
Exhibit 2: Draft Scored Texas Highway Freight Network Scenario 2

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Step 3 – The next step was to designate CRFCs from the Draft scored THFN. The process and logic for this step are summarized below.

The resulting CRFCs for each option are listed in Exhibit 3 and Exhibit 4.
Exhibit 3: CRFCs Identified in Option 1
Exhibit 4: CRFCs Identified in Option 2
Step 4 – Under the FAST Act, metropolitan planning organizations (MPOs) with a population of more than 500,000 are responsible for identifying CUFCs in their urbanized areas, in consultation with TxDOT. TxDOT provided MPOs with a mileage guideline based on population. MPOs selected and submitted their CUFC proposals to TxDOT, which were then incorporated into the THFN.

Exhibit 5: MPO Submitted CUFCs

This process resulted in two alternatives for the overall draft scored THFN, two options for the designation of 745 miles of CRFCs, and one set of CUFCs proposed by MPOs. The resulting four combinations are shown in Exhibit 6 through Exhibit 9.
Exhibit 6: Draft Scored THFN Alternative 1, CRFC Option 1
Exhibit 8: Draft Scored THFN Alternative 2, CRFC Option 1
Report prepared by Cambridge Systematics, Inc.
TEXAS FREIGHT MOBILITY PLAN UPDATE

Multimodal Freight Network Designation

May 11, 2017

Designating a Multimodal Freight Network

- Role
  - Promotes safe and efficient freight movement statewide
  - Carries the majority of the state’s freight movements
  - Connects the state to domestic and statewide trading partners
  - Supports the state’s economy and exports

- Benefits
  - Focuses limited resources on the network moving the majority of freight
  - Preserves the freight network for the movement of freight
  - Encourages private investment
Purpose and Objective of the Network Designation

- Key TFMP policy outcome was designation of Texas Highway Freight Network (THFN)
- FAST Act requires designating Critical Urban Freight Corridors (CUFCs) and Critical Rural Freight Corridors (CRFCs) to become part of the National Highway Freight Network (NHFN)
- The purpose of the system designation process is to employ an objective, data-driven process that is also stakeholder informed
- THFN will be the basis of needs assessment, project identification, recommendations and implementation
Designation Process

1. Develop criteria based on goals
2. Quantify value for each criteria
3. Score each criteria
4. Sum all criteria
5. Develop draft THFN
6. Incorpate & compare against Trunk System and existing network
7. Rank facilities based on total weighted scores
8. Weight criteria based on input
9. Designate critical urban and rural corridors
10. Draft final system for TxFAC approval

TxFAC Input on Weighting

Access and Connectivity Metrics
- Equally: 65%
- More: 15%
- Less: 15%
- Not Sure: 5%

Goods Movement Metrics
- Equally: 79%
- More: 62%
- Less: 29%
- Not Sure: 9%

Supply Chain Metrics
- Equally: 62%
- More: 29%
- Less: 9%
- Not Sure: 9%

Economic Metrics
- Equally: 54%
- More: 11%
- Less: 6%
- Not Sure: 0%
TxFAC Weighting Results

- Based on polling and input received following the March 9, 2017 meeting
  - Economic criteria – 10%
  - Goods Movement criteria – 30%
  - Supply Chain criteria – 30%
  - Market Access criteria – 30%
- Next step was to poll Metropolitan Planning Organizations (MPOs) and District Engineers (DEs)

MPO Results

ECONOMIC CRITERIA

- At 10%
- More Heavily
- Less Heavily
- Not Sure

GOODS MOVEMENT CRITERIA

- At 30%
- More Heavily
- Less Heavily
- Not Sure

SUPPLY CHAIN CRITERIA

- At 30%
- More Heavily
- Less Heavily
- Not Sure

MARKET ACCESS CRITERIA

- At 30%
- More Heavily
- Less Heavily
- Not Sure
### District Engineers Results

#### Economic Metrics
- At 10%
- More Heavily
- Less Heavily
- Not Sure

- 23%
- 19%
- 8%
- 50%

#### Goods Movement Criteria
- At 30%
- More Heavily
- Less Heavily
- Not Sure

- 0%
- 12%
- 23%
- 65%

#### Supply Chain Criteria
- At 30%
- More Heavily
- Less Heavily
- Not Sure

- 7%
- 11%
- 39%
- 43%

#### Market Access Criteria
- At 30%
- More Heavily
- Less Heavily
- Not Sure

- 11%
- 8%
- 46%
- 35%

### Weighting Results

#### Economic Metrics
- TxFAC supported < 25%
- MPO and DE supported > 30%

#### Goods Movement Metrics
- TxFAC supported > 25%
- MPO and DE supported 30%

#### Supply Chain Metrics
- TxFAC supported > 25%
- MPO and DE supported 30% or less

#### Market Access Criteria
- TxFAC supported > 25%
- MPO and DE supported < 30%

### Resulting Weighting

- Economic – 20%
- Goods Movement – 30%
- Supply Chain – 25%
- Market Access – 25%
Developing the THFN Scenarios

- THFN scenario development process
  - 1) All scored routes
  - 2) Routes scoring above the mean (top 3 scores)
  - 3) Routes scoring at mean and above (top 4 scores)
  - 4) Scored routes compared to existing THFN
  - 5) Scored routes compared to Trunk System
  - 6) Scenarios for potential revised THFN
Scored Network Compared to Trunk System

Top 3 Scores

Top 4 Scores

Potential Revised THFN

- Scenario 1
  - Add any missing Trunk System
  - Eliminate existing facilities not in top 4 score ranges (below the mean)
  - Add any rural facilities not on system that scored in top 3

- Scenario 2
  - Add any missing Trunk System
  - Eliminate any facilities that did not score in top 4 (below the mean)
  - Add any rural facilities not on system that scored in top 4
**TxFAC Discussion and Input**

- Add routes to existing THFN?
  - Criteria for doing so?
    - Top 3 scoring range
    - Top 4 scoring range
    - Other?
- Delete routes from existing THFN?
  - Criteria for doing so?
    - Top 3 scoring range
    - Top 4 scoring range
    - Other?
- Other strategic routes?
Critical Urban Freight Corridors

- MPOs >500,000 population submitted corridors
  - Resulted in 288 miles
  - Represents 77% of total CUFC mileage
- TxDOT to designate remaining 86 miles
  - Input from TxFAC
  - Consultation with MPOs
  - Input from workshops

MPOs Submitting CUFCs
- Alamo Area MPO
- Capital Area MPO
- El Paso MPO
- Hidalgo MPO
- Houston-Galveston Area Council
- North Central Texas Council of Governments

Top 3 Scored THFN with MPO Identified CUFCs
Top 4 Scored THFN with MPO Identified CUFCs

DESIGNATING CRITICAL RURAL FREIGHT CORRIDORS
Freight Advisory Committee May 11, 2017

Designating Critical Rural Freight Corridors

- TxDOT to designate 745 miles
- Identifying candidate corridors
  - Identified corridors meeting requirements in FAST Act
  - Focused on providing connectivity to PHFS
  - Examined highest scoring corridors out of that subset
  - Compared to input from stakeholder workshops and DEs
- Resulted in 2,198 miles of candidate corridors
- From this, two example options for getting to 745 miles are developed
  - Option 1: Highest scoring corridors in each region that connects to PHFS and has stakeholder support
  - Option 2: First 745 miles statewide with the highest score that connect to PHFS with stakeholder support

Candidates for Critical Rural Freight Corridors

<table>
<thead>
<tr>
<th>CRFC ID</th>
<th>Description</th>
<th>Miles</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>SH 137 from IH 20 to IH 10</td>
<td>110</td>
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<tr>
<td>2</td>
<td>SH 288 from Houston to Lake Jackson</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>SH 31 from Corsicana to Tyler</td>
<td>58</td>
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<tr>
<td>4</td>
<td>SH 31 from Waco to Corsicana</td>
<td>46</td>
</tr>
<tr>
<td>5</td>
<td>SH 34/Various from Corpus Christ to Lake Jackson</td>
<td>135</td>
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<tr>
<td>6</td>
<td>SH 35 from Houston to Lake Jackson</td>
<td>15</td>
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<td>7</td>
<td>SH 6 from IH 20 to Waco</td>
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<td>SH 6/US 190/US 177 from Waco to Houston</td>
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<td>9</td>
<td>US 271/SH 300 from Mount Pleasant to Longview</td>
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<td>10</td>
<td>US 281 from IH 20 to San Antonio</td>
<td>185</td>
</tr>
<tr>
<td>11</td>
<td>US 287/US 70 from Anamita to Wichita Falls</td>
<td>198</td>
</tr>
<tr>
<td>12</td>
<td>US 290 from Austin to Houston</td>
<td>87</td>
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<tr>
<td>13</td>
<td>US 59/US 76 from IH 20 to Beaumont</td>
<td>151</td>
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<tr>
<td>14</td>
<td>US 59 from Texarkana to Marshall</td>
<td>56</td>
</tr>
<tr>
<td>15</td>
<td>US 69 from Tyler to Beaumont</td>
<td>138</td>
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<td>16</td>
<td>US 75 from Anna to Sherman</td>
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<td>US287/US82 from Wichita Falls to Pecan Acres</td>
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<td>24</td>
<td>US 277/US 85 from Del Rio to IH 35</td>
<td>143</td>
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</tbody>
</table>

Total Miles: 2,198
Example Option 1: Proposed Texas CRFC

- Selected corridors in east and west with:
  - Highest score
  - Connectivity to PHFS
  - Stakeholder support
  - Balance of mileage

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>7</td>
<td>SH 6 from IH 20 to Waco</td>
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<td>US 271/SH 300 from Mount Pleasant to Longview</td>
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<td>US 200 from Austin to Houston</td>
<td>87</td>
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<tr>
<td>13</td>
<td>US 75 from Anna to Sherman</td>
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<tr>
<td>23</td>
<td>US 87 from IH 20 to San Angelo</td>
<td>77</td>
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<tr>
<td>24</td>
<td>US 87/US 82/US 81 from Wichita Falls to Pecan Acres</td>
<td>80</td>
</tr>
<tr>
<td><strong>Total Miles</strong></td>
<td></td>
<td><strong>747</strong></td>
</tr>
</tbody>
</table>

Example Option 2: Proposed Texas CRFC

- Selected first 745 miles with:
  - Highest score
  - Connectivity to PHFS
  - Stakeholder support
  - Balance of mileage

<table>
<thead>
<tr>
<th>CRFC ID</th>
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<tbody>
<tr>
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<td>SH 34/Various from Corpus Christ to Lake Jackson</td>
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<td>SH 6/US 190/FM1774 from Waco to Houston</td>
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<td>12</td>
<td>US 287/US 70 from Amarillo to Wichita Falls</td>
<td>198</td>
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<tr>
<td>16</td>
<td>US 69 from Tyler to Beaumont</td>
<td>138</td>
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<td>US 79 from Austin to IH 45</td>
<td>91</td>
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<td>US 287/US 82/US 81 from Wichita Falls to Pecan Acres</td>
<td>80</td>
</tr>
<tr>
<td><strong>Total Miles</strong></td>
<td></td>
<td><strong>745</strong></td>
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</table>
**Proposed Texas Highway Freight Network**

- **Alternative 1A**
  - Preliminary THFN Scenario 1
  - CUFCs
  - Option 1 for CRFCs

- **Alternative 1B**
  - Preliminary THFN Scenario 1
  - CUFCs
  - Option 2 for CRFCs

- **Alternative 2A**
  - Preliminary THFN Scenario 2
  - CUFCs
  - Option 1 for CRFCs

- **Alternative 2B**
  - Preliminary THFN Scenario 2
  - CUFCs
  - Option 2 for CRFCs

---

**Alternative 1A: Proposed Texas Highway Freight Network**

[Map of Proposed Texas Highway Freight Network]

Legend:
- [Texas Freight Network]
- [Intermodal Centers (land)]
- [International Trade Corridors]
- [Waterways]

Freight Advisory Committee  
May 11, 2017
Alternative 2B: Proposed Texas Highway Freight Network

TxFAC Discussion and Input

- Critical urban freight corridors
  - What drives designation?
    - Piecemeal designation based on projects
    - Designation based on establishing connected network
- Critical rural freight corridors
  - What drives designation?
    - Designation tool score
    - Connectivity to NHFN
    - Stakeholder input (workshops and DEs)
  - Input on specific facilities
Next Steps on THFN Designation

- Obtain TxFAC input
  - Agree on date for submitting input
- Revise
  - THFN
  - CUFCs
  - CRFCs
- Distribute final draft network to TxFAC for approval
  - Goal is to be approved by May 31
  - Submit CUFC and CRFC to FHWA for approval by July 15
Freight Rail Network - Discussion

- All Class 1 railroads are included in National Multimodal Freight Network (NMFN) and the TMFN
- All shortlines included on TMFN
PORTS AND WATERWAYS

Criteria for Designating Ports and Waterways on NMFN

- Ports and waterways
  - All ports handling 2,000,000 short tons of cargo or more
  - U.S. inland and intracoastal waterways specified in section 206 of the Inland Waterways Revenue Act of 1978
Texas Ports and Waterways on NMFN

- Ports
  - Beaumont
  - Brownsville
  - Calhoun
  - Corpus Christi
  - Galveston
  - Freeport
  - Houston
  - Port Arthur
  - Texas City
  - Victoria
- Gulf Intracoastal Waterway
Texas Airports

- Airports on NMFN
  - The 6 Texas airports that rank in the FAA top 50 air cargo airports based on tonnage
  - Plus Laredo because of freight importance and location
Next steps

– Add THFN based on input on THFN alternatives
– Feedback on non-highway modes
  • TxDOT has submitted comments to USDOT on NMFN
  • Should Texas network extend beyond the national network?
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Highway Freight Network Scoring - Top 4 Score Ranges

FSD Score Weighted - Top 4
FSD_Score

Mean Score
0.5 to 1.5 Std Dev
1.5 to 2.5 Std Dev
> 2.5 Std Dev

Prepared by Cambridge Systematics.
Data for planning purposes only.
May 4, 2017
Top 3 Scoring Highway Freight Network Compared to Existing THFN
Top 4 Scoring Highway Freight Network Compared to Existing THFN
Top 3 Scoring Highway Freight Network Compared to Trunk System

FSD Score Weighted - Top 3
- 0.5 to 1.5 Std Dev
- 1.5 to 2.5 Std Dev
- > 2.5 Std Dev
- TXDOT Refined Trunk System

Prepared by Cambridge Systematics. Data for planning purposes only. May 3, 2017
Preliminary TFHN - w/ Top 3 Scores (Option 1)

Legend
- Texas Freight Highway Network
- FSD Score Weighted - Top 4
  - Mean to 0.5 Std Dev
  - 0.5 to 1.5 Std Dev
  - 1.5 to 2.5 Std Dev
  - > 2.5 Std Dev
- Primary and Secondary FN
- Commercial Border Crossing
- Seaports

Prepared by Cambridge Systematics.
Data for planning purposes only.
May 4, 2017
Potential Revised THFN- Scenario 2
Top 3 Scored Highway Freight Network with MPO Identified Critical Urban Freight Corridors (CUFCs)
Alamo Area MPO Identified CUFCs
Capital Area MPO Identified CUFCs

FSD Score Weighted - Top 3
- 0.5 to 1.5 Std Dev
- 1.5 to 2.5 Std Dev
- > 2.5 Std Dev
- MPO/RPO CUFC (Prop)

Prepared by Cambridge Systematics.
Data for planning purposes only.
May 3, 2017
El Paso MPO Identified CUFCs

[Map showing identified CUFCs]
Hidalgo MPO Identified CUFCs

FSD Score Weighted - Top 3
- 0.5 to 1.5 Std Dev
- 1.5 to 2.5 Std Dev
- > 2.5 Std Dev
- Hidalgo CUFC (Prop)

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Data for planning purposes only.
May 3, 2017
Houston- Galveston Area Council Identified CUFCs
North Central Texas Council of Governments Identified CUFCs

FSD Score Weighted - Top 3

- 0.5 to 1.5 Std Dev
- 1.5 to 2.5 Std Dev
- > 2.5 Std Dev
- NCTCOG CUFC (Prop)

Prepared by Cambridge Systematics. 
Data for planning purposes only. 
May 3, 2017
Identified Candidates for Critical Rural Freight Corridors (CRFCs)
## Table of CRFC Candidate Corridors

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<td>SH 35 from Houston to Lake Jackson</td>
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<tr>
<td>25</td>
<td>US 277/US 85 from Del Rio to IH 35</td>
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</table>

**Total Miles**  
**2,198**
Example Option 1: Proposed Texas CRFC
Example Option 2: Proposed Texas CRFC
Alternative 1A: Proposed Texas Highway Freight Network
Alternative 1B: Proposed Texas Highway Freight Network
Alternative 2A: Proposed Texas Highway Freight Network
Alternative 2B: Proposed Texas Highway Freight Network
Texas Rail Network
Dallas-Fort Worth–Arlington Rail Network

Dallas - Fort Worth - Arlington, Texas Rail Network

Texas Railroad System
- Class I Rail
- Shortline Rail
- Siding Rail
- Rail Facility
- Airport
- Major Water Port
- Urbanized Area

Prepared By: Cambridge Systematics
May 4, 2017
Notice: This map was produced for planning purposes only.
Overview

- Purpose of the study is to identify roadway and rail projects that will enhance connectivity to Texas seaports
  - Focus on first/last mile connectors
  - Roadway projects will be evaluated for eligibility for potential inclusion in the UTP
  - Study will serve as a basis for project selection for any port access funding from the State (i.e., similar to Rider 48)

- Final implementation strategy will include list of connectivity issues paired with prioritized project list to address the issues
  - Identified projects will be mapped to potential state and federal funding sources (e.g., TMF, TIGER, and FASTLANE)

- Consultant team is working with ports, TxDOT Districts, MPOs, and local and county governments
Project Status

- Completed assessment of current and future road and rail connectivity at each port
- Currently in the early stages of identifying and developing alternatives, including assessing feasibility and developing a high level business case for viable alternatives
- Major upcoming deliverables:
  - Technical memorandum for proposed alternatives: July 31, 2017
  - Technical memorandum for funding & financing options: August 31, 2017
  - Implementation strategy: November 30, 2017
Modal Updates

- Objectives of modal profiles include:
  - Assess the multimodal network available for freight movement
  - Document the role and performance the modes play in supporting trade and commerce
  - Identify the deficiencies and bottlenecks impacting freight movement
  - Develop recommendations to enhance performance of the network
- TFMP update includes:
  - Freshen data
  - Validate needs and recommendations
  - Designation of Texas Multimodal Freight Network
Texas Ports and Waterways

- Texas has the largest port system in the Gulf
- Over 1,000 miles of navigable channels
- A 423-mile stretch of the Gulf Intracoastal Waterway
- Handles over 600 million tons or over 20 percent of national waterborne trade annually
Growth in Texas Port Volumes

- Texas ports’ share of total U.S. volumes total grew from 19.5% in 2007 to 21.8% in 2015
- Largest growth in Houston, Corpus Christi and Beaumont

Texas High Use Harbors, Millions of Tons, Domestic plus Foreign

Source: Army Corps of Engineers Waterborne Commerce Statistics

Domestic tonnage is half the level of foreign tonnage
- Houston volumes declined during recession, followed by large increase from 2009 to 2015.
- Decrease in domestic in Corpus Christi followed by large increase from 2009 to 2015
- Steady increase for Beaumont in domestic.
- Texas share of U.S. domestic grew from 12.5% in 2007 to 16.2% in 2013

Foreign tons relatively flat, growth in Houston in 2010 and 2011, decline from 2011 to 2015
Major Shifts in Texas Port Volumes

**Inbound**

- 2100 Crude Petroleum
- 2229 Petroleum Products
- 3200 Chemicals excl. Fertilizers
- 6168 Food and Food Products
- 5354 Primary Metal Products
- 4349 Sand, Gravel, Shells, Clay, Salt and Slag
- 4600 Non-Ferrous Ores and Scrap
- 7000 Manufactured Goods

**Outbound**

- 2100 Crude Petroleum
- 2229 Petroleum Products
- 3200 Chemicals excl. Fertilizers
- 6168 Food and Food Products
- 5354 Primary Metal Products
- 4349 Sand, Gravel, Shells, Clay, Salt and Slag
- 4600 Non-Ferrous Ores and Scrap
- 7000 Manufactured Goods
Freight Advisory Committee

May 11, 2017

Shifts in Crude Oil Port Volumes

- **Crude Oil**
  - Decreases in inbound volumes have occurred across most ports
  - Increases in outbound volumes have been most significant in Corpus Christi, Beaumont and Houston

**Inbound Crude Oil Volumes by Port**

**Outbound Crude Oil Volumes by Port**

Gulf Intracoastal Waterway (GIWW) Volumes

**Crude Oil Volumes by GIWW Segment**

**Total Volumes Texas Portion of GIWW**
Ports Challenges

- Increasing demand stemming from:
  - Expansion of domestic energy production
  - Oil and Gas Production and Petroleum Products
  - Liquid natural gas (LNG)
  - Plastics manufacturing
  - Project cargo
  - Population growth
- Last mile connectivity
- Heavy haul routes

Waterways Challenges

- Increasing demand may require additional investments
  - Maintenance
  - Equipment
- Increasing imbalances in trade flows
Air Cargo Overview

- One of the largest state airport systems in the U.S.
  - nearly 400 public use airports
  - 24 commercial service airports
  - 6 of the top 50 cargo airports in the US (landed weight 2015)
- Private investment supports maintenance of airport assets – improvements to cargo facilities
- Cargo airports generally in metropolitan areas served by the THFN
- Key issues
  - Landside access and last mile connectivity
  - Congestion around urban areas
Air Cargo - Assets

- 24 commercial service airports
- 6 of the top 50 cargo airports in U.S. in 2015 based on landed weight
- Laredo ranks 52

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DFW</td>
<td>Dallas/Fort Worth International</td>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>IAH</td>
<td>George Bush Intercontinental/Houston</td>
<td>17</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>SAT</td>
<td>San Antonio International</td>
<td>29</td>
<td>33</td>
<td>-4</td>
</tr>
<tr>
<td>AFW</td>
<td>Fort Worth Alliance</td>
<td>36</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>ELP</td>
<td>El Paso International</td>
<td>43</td>
<td>41</td>
<td>2</td>
</tr>
<tr>
<td>AUS</td>
<td>Austin-Bergstrom International</td>
<td>47</td>
<td>44</td>
<td>3</td>
</tr>
<tr>
<td>LRD</td>
<td>Laredo International</td>
<td>56</td>
<td>52</td>
<td>4</td>
</tr>
</tbody>
</table>

Trends in Air Cargo Volumes

[Graph showing landed weight (tons) from 2012 to 2015 for different airports with trends indicated.]
### Transportation Volumes by Pipeline Commodity in Texas

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Volume</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>7,071,203 TCF (trillion cubic feet)</td>
<td>2015</td>
</tr>
<tr>
<td>Natural Gas Liquids (NGL)</td>
<td>564,714 MB (thousand barrels)</td>
<td>2016</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>5.4 MMB (million barrels)</td>
<td>2016</td>
</tr>
</tbody>
</table>

Source: U.S. EIA state production data

Note: Assumes produced commodities make it into the pipeline system at some point in the gathering, transmission, and distribution.
**Freight Advisory Committee May 11, 2017**

**Refined Petroleum Pipelines in Texas**

- **Pipeline Challenges**
  - Capacity constraints in some areas
  - Growing demand in non-traditional markets
  - Aging infrastructure
  - Terminal access in congested urban areas
  - Opposition to new pipelines
TEXAS FREIGHT MOBILITY PLAN UPDATE
Preliminary Projects

May 11, 2017

Identifying Projects for the Update

- Progress to date
  - Highways: Compiling latest UTP projects on the adopted Texas Highway Freight Network (THFN)
  - Non-highway modes: Updated projects from existing plans to account for those that have been implemented
- In process
  - Comparing UTP projects against needs and projects identified in adopted TFMP
  - Obtaining latest data and stakeholder input to update needs assessment
  - Analyzing how latest projects in UTP will impact freight movements
- Next steps
  - TxFAC validation on projects in adopted TFMP and new projects in the UTP
  - TxFAC input on additional strategic and longer term freight projects
  - Conduct needs assessment based on updated THFN and data
  - Revise project lists and recommendations
What is Needed from the TxFAC?

- Review projects in adopted Freight Plan
  - Are they still valid?
  - Are there missing projects?
- Discuss potential projects from the latest UTP and other updated modal plans and studies
- Seek input on strategic and longer term freight projects
Identified projects based on Freight Plan goals

**Mobility and Connectivity**
- Capacity expansion
- Lane widening or additions
- New freeway or highway construction

**Safety**
- Areas where truck-related accidents are most frequent

**Freight Asset Utilization and Management**
- Bridges in poor condition
- Bridges with less than 18’6” vertical clearance
- Roadway rehabilitation

**Technology**
- Improved signalization
- Wireless ITS and traffic management systems
- Dynamic message signage

### Adopted Freight Plan - Highway Projects

<table>
<thead>
<tr>
<th>Total</th>
<th>Est ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>878</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Let (5/2017)*</th>
<th>#</th>
<th>Est ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>121</td>
<td>$1.9</td>
</tr>
</tbody>
</table>
**Adopted Freight Plan – Highway Projects**

<table>
<thead>
<tr>
<th>Lot</th>
<th>#</th>
<th>Est ($ M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility/Connectivity</td>
<td>92</td>
<td>$1,549.0</td>
</tr>
<tr>
<td>Safety</td>
<td>5</td>
<td>$2.5</td>
</tr>
<tr>
<td>Asset Utilization and Management</td>
<td>25</td>
<td>$295.8</td>
</tr>
<tr>
<td>Technology</td>
<td>2</td>
<td>$3.0</td>
</tr>
<tr>
<td>Total*</td>
<td>124</td>
<td>--</td>
</tr>
</tbody>
</table>

*Some projects addressed multiple needs.

**Freight Plan Update - Highway Projects**

<table>
<thead>
<tr>
<th>Status</th>
<th>#</th>
<th>Estimate ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finalizing for Construction</td>
<td>562</td>
<td>$4.4</td>
</tr>
<tr>
<td>Under Development</td>
<td>272</td>
<td>$8.2</td>
</tr>
<tr>
<td>Long Term Planning</td>
<td>40</td>
<td>$3.5</td>
</tr>
<tr>
<td>Total to be Developed</td>
<td>874</td>
<td>$16.1</td>
</tr>
<tr>
<td>Construction Scheduled</td>
<td>595</td>
<td>$4.7</td>
</tr>
<tr>
<td>Overall Total</td>
<td>1469</td>
<td>$20.8</td>
</tr>
</tbody>
</table>
## Freight Plan Update - Highway Projects

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimate ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility/Connectivity</td>
<td>14,314</td>
</tr>
<tr>
<td>Safety</td>
<td>237</td>
</tr>
<tr>
<td>Asset Utilization and Management</td>
<td>949</td>
</tr>
<tr>
<td>Bridge</td>
<td>579</td>
</tr>
<tr>
<td>Technology</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16,090</strong></td>
</tr>
</tbody>
</table>

### AIR CARGO HIGHWAY ACCESS PROJECTS
**Adopted Freight Plan – Air Cargo Highway Access Projects**

**Proximity to airports**
- Highway projects in 5 mile radius

**Highway projects**
- Roadway widening
- Interchange improvements
- ITS installation

**Airport survey**
- Major cargo airports
- Capture any ongoing or planned projects
- Specific needs

---

**Adopted Plan - Air Cargo Highway Access Projects**

<table>
<thead>
<tr>
<th>Airport</th>
<th>Projects</th>
<th>Additional Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFW</td>
<td>8</td>
<td>$1,424,764</td>
</tr>
<tr>
<td>IAH</td>
<td>2</td>
<td>8,300</td>
</tr>
<tr>
<td>SAT</td>
<td>3</td>
<td>481,756</td>
</tr>
<tr>
<td>AFW</td>
<td>2</td>
<td>10,250</td>
</tr>
<tr>
<td>ELP</td>
<td>12</td>
<td>324,196</td>
</tr>
<tr>
<td>AUS</td>
<td>5</td>
<td>411,527</td>
</tr>
<tr>
<td>LRD</td>
<td>11</td>
<td>130,683</td>
</tr>
</tbody>
</table>

Additional Needs:
- $2,794 Million

- Widen US 183 bridge and install left turn lane
- Loop 20/International Boulevard interchange
RAIL PROJECTS

Key Rail Needs from Adopted TFMP

<table>
<thead>
<tr>
<th>Category</th>
<th>Example Projects to Address Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>System capacity and operations</td>
<td>• Doubletracking</td>
</tr>
<tr>
<td></td>
<td>• Line reconstruction</td>
</tr>
<tr>
<td></td>
<td>• Mainline capacity</td>
</tr>
<tr>
<td>Intermodal and rural connectivity</td>
<td>• New facilities</td>
</tr>
<tr>
<td></td>
<td>• Rehabilitations of shortlines</td>
</tr>
<tr>
<td></td>
<td>• Line upgrades (weights and clearance)</td>
</tr>
<tr>
<td>NAFTA and Border Ports of Entry</td>
<td>• New rail bridges</td>
</tr>
<tr>
<td></td>
<td>• Capacity enhancements</td>
</tr>
<tr>
<td>Safety/security</td>
<td>• Grade crossing elimination</td>
</tr>
<tr>
<td></td>
<td>• Grade crossing technology</td>
</tr>
</tbody>
</table>
## Rail Projects from Adopted TFMP

<table>
<thead>
<tr>
<th>Location</th>
<th>Project Name</th>
<th>Project Description</th>
<th>Estimated Cost</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont</td>
<td>Neches River Rail Crossing</td>
<td>Construction of a second bridge for a rail crossing of the Neches River at Beaumont:</td>
<td>$240,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Beaumont</td>
<td>Beaumont Rail Capacity</td>
<td>Expand rail capacity through the Beaumont, Texas rail corridor</td>
<td>TBD</td>
<td>KCS</td>
</tr>
<tr>
<td>Dobbin</td>
<td>Dobbin Wye Connection</td>
<td>New Wye Connection at Dobbin, TX (Houston, Conroe Subdivisions)</td>
<td>TBD</td>
<td>BNSF</td>
</tr>
<tr>
<td>Fort Stockton to Alpine</td>
<td>South Orient Rail Line Rehab (Alpine)</td>
<td>Rehabilitation of the South Orient rail line between Fort Stockton and Alpine to open the interchange with UP at Alpine.</td>
<td>$550,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Greenville to Mount Pleasant</td>
<td>Northeast Texas Rural Rail Transportation District Rail Line Rehab</td>
<td>Rehabilitation of the Northeast Texas Rural Rail Transportation District (NETEX) rail line from Greenville to Mount Pleasant (66 miles)</td>
<td>$32,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Greenville to Wylie</td>
<td>Reconstruction of NETEX Rail Line</td>
<td>Reconstruction of an abandoned rail corridor owned by the NETEX rail line from Greenville to Wylie (23.2 miles).</td>
<td>$25,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Houston</td>
<td>Houston Rail Grade Separation (West Belt Subdivision)</td>
<td>Construction of five grade separations and the closure of five additional crossings.</td>
<td>$57,600</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Houston</td>
<td>Double Track Rail (Sinco to Harrisburg Junction)</td>
<td>Double Track Sinco Junction to Harrisburg Junction</td>
<td>TBD</td>
<td>UP</td>
</tr>
<tr>
<td>Hurst</td>
<td>Double Track Rail on TRE</td>
<td>Double Track TRE - Tower SS to Hurst and additional lines from Carrollton to Irving and Irving to Dallas.</td>
<td>TBD</td>
<td>BNSF</td>
</tr>
<tr>
<td>Ruger</td>
<td>Double Track Rail on TRE</td>
<td>Double Track TRE - Tower SS to Hurst and additional lines from Carrollton to Irving and Irving to Dallas.</td>
<td>TBD</td>
<td>BNSF</td>
</tr>
<tr>
<td>Southside</td>
<td>Eastside Rail Crossing</td>
<td>Construction of a new rail crossing at Southside</td>
<td>$110,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Statewide</td>
<td>South Orient Rail Projects</td>
<td>South Orient Rail Projects: TxDOT and Texas Pacifico (TXPF) have executed a contract amendment that requires TXPF to pay a $50 carload fee to reimburse Texas for any State funds expended on rehabilitation of the line.</td>
<td>$2,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
<tr>
<td>Sulphur Junction to Fort Stockton</td>
<td>South Orient Rail Line Rehab (Fort Stockton)</td>
<td>Rehabilitation of the South Orient rail line between Sulphur Junction and Fort Stockton (13.6 miles).</td>
<td>$15,000</td>
<td>TxDOT Legislative Appropriations Request</td>
</tr>
</tbody>
</table>
### Rail Border Crossing Projects

- **Laredo Bridge Double Track** - Construction of a second bridge or double track bridge at Laredo to improve rail traffic flows to/from Mexico, Laredo.
- **Perform various upgrades to 31 bridges on the BNSF El Paso Subdivision within the next 10–15 years, El Paso County**
- **Eagle Pass Rail Improvements** - Double-tracking segments between BNSF and UP sidings and between UP siding and tracks at Eagle Pass in the vicinity of the bridge to Piedras Negras, an intermodal facility with lay-down pad for container movements, and improvements to assist U.S. Customs and Border Protection (CBP) in conducting border security measures.
- **Proposed rail link north of Laredo**

---

### PORTS AND WATERWAYS PROJECTS
**Key Ports and Waterways Needs from Adopted TFMP**

**Example Projects to Address Needs**

- **System capacity and operations**
  - Deepening, widening and dredging
  - Terminal construction/enhancements
  - Improved access and relief routes

- **Intermodal and rural connectivity**
  - New on-dock and near-dock facilities
  - Improved access routes
  - At-grade crossing elimination

- **NAFTA and Border Ports of Entry**
  - Improved rail and road access between ports and border regions
  - Expanded warehouse and distribution networks

- **Safety/security**
  - Grade crossing elimination
  - Cargo screening technology

**Summary of Projects by Port**

<table>
<thead>
<tr>
<th>Port</th>
<th>Count of Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont</td>
<td>32</td>
</tr>
<tr>
<td>Brownsville</td>
<td>10</td>
</tr>
<tr>
<td>Calhoun</td>
<td>5</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>7</td>
</tr>
<tr>
<td>Freeport</td>
<td>11</td>
</tr>
<tr>
<td>Galveston</td>
<td>5</td>
</tr>
<tr>
<td>Houston</td>
<td>17</td>
</tr>
<tr>
<td>Port Arthur</td>
<td>11</td>
</tr>
<tr>
<td>Victoria</td>
<td>7</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>105</strong></td>
</tr>
</tbody>
</table>

*Port Project Total Costs - $2,953,823*
GIWW Projects

<table>
<thead>
<tr>
<th>Project Description</th>
<th>2014 GIWW Master Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazos River Floodgates and Colorado River Locks</td>
<td></td>
</tr>
<tr>
<td>Placement of revetments along placement areas</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>New fleeting areas: Provide funding assistance for the creation of new fleeting areas</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>that would accommodate all available barge traffic</td>
<td></td>
</tr>
<tr>
<td>Replacement of FM 457 swing bridge (Caney Creek Bridge)</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>Real estate options for PA86 placement area in Brazoria County</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>The Maritime Division is working on an application to MARAD to designate the</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>Texas portion of the GIWW as the M-69</td>
<td></td>
</tr>
<tr>
<td>Dredging and widening navigational channel projects identified in the Water</td>
<td></td>
</tr>
<tr>
<td>Resources Reform and Development Act, the annual Energy and Water Appropriations Act</td>
<td></td>
</tr>
<tr>
<td>or other legislation under US Army Corps of Engineers authorized projects</td>
<td>2014 GIWW Master Plan</td>
</tr>
<tr>
<td>authorized projects (conjunction with federal and local partner funding)</td>
<td></td>
</tr>
<tr>
<td>TxDOT Legislative Appropriations Request (2015-2016)</td>
<td></td>
</tr>
</tbody>
</table>

Next Steps

- Finalize TMFN designation and compare against existing project lists and UTP
- Develop/Refine Strategic Projects
- Run project against freight plan goals
- FAC to review project lists
- Combine input to finalize project list
- Becomes basis for Freight Investment Plan
What is a Short Line Freight Railroad?

- Defined as a Class 3 railroad, annual operating revenue of less than $37.4M
- Most were once branch lines of larger railroads, abandoned or spun off
- Require significant capital investment to rebuild and maintain
- Entrepreneurial in truest sense, small businesses focused on customer service and cost control
- First and last mile of the freight journey - interface between customers and Class 1 railroads
- Provide labor intensive services that are unprofitable for large railroads

SHORT LINE FREIGHT RAIL INDUSTRY in United States

- More than 600 short line railroads
- Employing over 18,300 people
- Operating 50,000 miles of track in 49 states - 38% of rail network
- Serving over 12,000 shippers, that employ over 1,000,000 people
- Paying nearly $1B in taxes annually, average of 20% of revenue
- Infrastructure built and maintained with private funds
- Vital role linking rural America to the Class 1 rail network

*Source 2014 ASLRRRA Facts & Figures*
• 43 short line railroads
• 20% of rail network
• Employ almost 1,500 people (*TxDot Study 2016)
• Handle over 387,000 carloads of freight annually (*ASLRRA)
• Take 1,024,000 trucks off the road (*ASLRRA)
• Savings of an estimated $45M in pavement damage (*ASLRRA)
• Estimated $354M in Economic Output Impact (*TxDot Study 2016)

Texas Short Line Freight Railroad Facts

• Make substantial Capital Investments in transportation infrastructure
• Drive Economic Development - new Jobs and Tax base Growth
• Pay significant Property and Franchise Taxes
• Connect Rural Texas to National Rail Network
• Relieve Highway Congestion
• Reduce Taxpayer Burden - Protect public road infrastructure – heavy truck road and damage
• Provide Environmental Benefits – reduced emissions

Short Line Freight Railroads – Good for Texas!
“Real benefits can be achieved by partnering with the private sector on rail projects. The sustainability (economic, environmental, and social) benefits of rail when compared to highway warrant a more prominent and established role for rail transportation in the state’s overall transportation policy.”

2013 TxDot Study “Benefits of Public Investment in Freight Rail Infrastructure”

2013 TxDot Study

- 33 States, outside of Texas, have programs to fund rail infrastructure projects.
- Texas Railroad Relocation and Improvement Fund (2005) - has never been funded.
“As Texas short lines play a significant role in the local community and the state economy, there is a necessity to establish assistance programs for short lines to help maintain and improve the existing infrastructure.”

TxDot Study 2016: “Transportation and Economic Impact of Texas Short Line Railroads”

2016 TxDot Study

- Capital Investment Tax Credit
- State Loan and Grant Options
- State Support for Federal Loan and Grant Applications
- Utilize Texas Railroad Relocation and Improvement Fund (2005)
- Engaged, Empowered TxDot Rail Division or Multi-modal Freight Division that Includes Rail
- Economic Development Commission Connection with Short Lines

How To Encourage Growth of Texas Short Lines
Specific Types of Projects

- Bridge and Track Upgrades
  - 286k
- New Rail Sidings and Spurs
- Crossing and Signal Projects
- Improved Interchange Between Carriers
- Catastrophic Event Recovery

State Support on Highway Issues

- Highway Rail Crossing Maintenance and Replacement
- Highway Crossing Consolidation and Closings
TEXAS SHORTLINE AND REGIONAL RAILROAD ASSOCIATION

- 115 Railroads operating 17,000 miles of track in North America
- 7,200 employees
- 2,800 Customers served
- 3 million carloads moved annually
- Safety always priority

Genesee & Wyoming
Legacy Infrastructure Inherited

States with Rail-Eligible Programs
Lottery-backed bond initiative to invest in air, rail, marine, transit, and bike/ped projects.
- Created to ensure that Oregon’s transportation system is strong, diverse, and efficient.

- Grants cover up to 70% project cost
  - Minimum 30% match

- Five rounds of Connect Oregon funding
  - $382 million available funding
  - $915 million requested

- Extensive review Process
• Solves a safety and transportation problem
• Beneficial to all parties involved
• Broad mix of funding
  – ConnectOREGON Grant (rail improvements)
    • Funds up to 80% of project cost
  – Portland & Western Railroad (rail improvements)
    • Required match for program eligibility
  – Oregon DOT Rail Division (grade crossing improvements)
  – Oregon Regional Solutions (roadway improvements)
  – City of Rainier, Oregon (utilities, City enhancements)

ConnectOregon

• Grant program open to both public and private entities
  – Larger publically owned railroads in Washington
• $7.04 million appropriated for 2017-2019
  – No restriction on size of award
• “This program is directed toward larger projects where it is difficult to gain a contribution and where the rail location or the project is of strategic importance to the local community and the state.”
• Grants are administered by WSDOT
  – Require applicants to provide a business plan and a cost benefit analysis to ensure projects generate public benefits
• Grants are scored by WSDOT
  – WS DoC, FMSIB, and WPPA also participate in scoring
  – Recommended list is sent and approved by the legislature

WSDOT Freight Rail Assistance Program
• Replaces three crossings allowing for easier access to the Olympic Gateway shopping center

• Utilization of Washington Department of Transportation’s Freight Rail Assistance Program
  – 70% funded by the grant program
  – 30% private match

“This area of this project is a major nexus of transportation in Grays Harbor County. The shopping center is a significant retail destination in our region. This segment of US 12 has an average traffic volume of almost seven million vehicles. Traffic leaving US 12 and entering the shopping center must cross one of seven at-grade crossings, three of which are in desperate need of repair or replacement. US 12 is designated a freight route and provides the most significant road access from the east to Aberdeen and the Port of Grays Harbor. The PS&P rail line is the only route serving the Port of Grays Harbor identified as a Global Gateway in the Washington State Freight Mobility Plan, and the cities of Aberdeen and Hoquiam.”

WSDOT Freight Rail Assistance Program

• Participates in the cost to rebuild highway-railroad crossings
• Allocation of funds from multiple sources
• Involvement from the railroad, roadway jurisdiction, Iowa DOT, Iowa Transportation Commission

Iowa’s Highway-Railroad Grade Crossing Surface Repair Program
Oklahoma State Tax Credit

- Began in 2006
- 50% credit allowed against the State income tax capped at $2,000* per track mile
- Qualified railroad reconstruction/maintenance
- Oklahoma Department of Transportation involvement

Texas State Tax Credit?

- HB 3566 introduced in 2017 by Rep. Trent Ashby
- 50% credit allowed against the State Franchise tax capped at $3,500 per track mile
- Four Joint Authors: Reps. Shine, Phillips, Geren, Price
- Three coauthors: Reps. Button, Faircloth, Koop
- Qualified railroad reconstruction/maintenance
- TXDOT involvement
Questions?